

Depression and Quality of Life in Patients with Rheumatoid Arthritis: The Impact of Self-Disgust

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Background: Rheumatoid arthritis (RA) significantly impairs patients' quality of life. Psychological factors such as depression and self-disgust have been shown to be associated with quality of life; however, their interactions and combined effects remain unclear. Moreover, the level of self-disgust among Chinese patients with RA has not yet been investigated.

Objective: To examine the mediating effects of self-disgust in the relationship between depression and quality of life among patients with RA, and to provide a reference for clinical practice aimed at improving patients' quality of life.

Methods: This cross-sectional study was conducted at a tertiary general hospital in Guangzhou between August 2024 and February 2025, involving 342 patients with RA. Participants completed the General Information Questionnaire, the Questionnaire for the Assessment of Self-Disgust (QASD), the Hospital Anxiety and Depression Scale (HADS) and Quality of Life in RA Patients Scale. Univariate and Pearson correlation analyses were performed using SPSS 27.0, and mediation effects were tested with the Process plugin.

Results: The mean scores of depression, the Quality of Life in RA Patients Scale and QASD were (9.01±4.97), (82.23±16.73) and (27.58±13.67), respectively. Depression was significantly correlated with quality of life ($r=0.787$, $P < 0.001$), depression was significantly correlated with self-disgust ($r=0.804$, $P < 0.001$), and quality of life was significantly correlated with self-disgust ($r=0.727$, $P < 0.001$). Self-disgust exhibited a partial mediating effect on the relationship between depression and quality of life in patients with RA, accounting for 20.60% of the total effect.

Conclusion: Patients with RA have a relatively low quality of life. Self-disgust plays a partial mediating role between depression and quality of life in patients with RA. Nursing staff should pay attention to the assessment and screening of patients' depression and self-disgust, and implement targeted interventions to improve patients' quality of life.

Keywords: RA, self-disgust, depression, quality of life, mediating effect

Introduction

RA is a chronic, multisystemic inflammatory autoimmune disease of unknown etiology. Its main clinical manifestations include erosive, symmetric swelling and pain affecting multiple joints. In severe cases, RA can lead to joint deformity and loss of function, and may also induce complications such as pulmonary fibrosis and anemia.^{1,2} The global prevalence of RA is approximately 1%,³ while the prevalence in China is about 0.42%.⁴ The disability rate can reach as high as 70%, seriously compromising patients' quality of life. Beyond its physical burden, RA is strongly associated with psychological distress. Data show that 50% to 70% of RA patients suffer from depression, and depression is also a recognized predictor of poor quality of life.⁵ However, the specific emotional pathways through which psychological distress impairs quality of life in RA remain insufficiently understood.

Self-disgust is a negative psychological state characterized by persistent or recurrent feelings of disgust.⁶ More specifically, it is theorized as a negative self-conscious emotional schema comprising two core dimensions: physical self-

disgust (eg, “I find myself repulsive”) and behavioral self-disgust (eg, “I often do things I find revolting”).⁷ Self-disgust is considered to be distinct from other negative self-conscious emotions in many respects. For instance, while guilt and embarrassment are typically transient emotions tied to specific actions, self-disgust is a more enduring state directed at the core aspects of the self.⁸ Similarly, it is distinct from self-criticism, which entails a persistent, evaluative judgment of oneself accompanied by feelings of worthlessness or failure.⁹ Furthermore, high levels of self-disgust are associated with adverse psychological and mental health outcomes.¹⁰ Some studies have reported that self-disgust is positively correlated with depression and may play a mediating role in the development of depression.^{11,12}

According to Folkman’s stress coping theory, individuals can make use of their own resources for cognitive evaluation and coping activities under stressor stimulation, which ultimately affects the physical and mental stress adaptation.¹³ In the context of rheumatoid arthritis (RA), persistent pain, joint deformity, and functional decline could create intense and persistent physical and psychological stressors for patients. Self-disgust, a persistent negative evaluation in the face of stressors, may distort perceptions of personal resources, undermine confidence in problem-solving, further impair adaptation to stress, and ultimately reduce overall quality of life.^{14,15} Related studies indicate that elevated levels of self-disgust have been observed in several disease populations, including patients with rectal cancer and a stoma,¹⁶ diabetes,¹⁷ and cerebral hemorrhage.¹⁸ Research further indicates that elevated self-disgust correlates with poorer quality of life.^{19,20} However, no study to date has explicitly examined self-disgust in RA populations, nor has the potential mediating role of self-disgust between depression and quality of life been tested in this group.

Therefore, this study aims to investigate the effects of depression and self-disgust on the quality of life of RA patients, as well as the mediating effect of self-disgust between depression and quality of life in RA patients, in order to provide evidence-based references for nursing staff to enhance patients’ quality of life.

Methods

Study Design and Participants

This study employed a cross-sectional design. From August 2024 to February 2025, convenience sampling was used to recruit RA patients who were treated in the Department of Rheumatology at a Class III Grade A hospital in Guangzhou, Guangdong Province. This hospital serves as a regional referral center, receiving patients from across the Guangdong province and the broader southern China region. The department manages a high volume of both outpatient and inpatient cases, covering the full spectrum of RA disease activity and stages, from newly diagnosed to long-standing, complex cases requiring biologic therapy or hospitalization.

The inclusion criteria were as follows: (1) patients met the 2010 diagnostic criteria for RA jointly developed by the American College of Rheumatology and the European League Against Rheumatism;²¹ (2) adults age ≥ 18 years; (3) normal communication and cognitive abilities; (4) provided informed consent and voluntarily participated. The exclusion criteria were as follows: (1) severe mental illness or cognitive impairment; (2) presence of severe dysfunction in heart, liver, kidneys, or other major organs.

According to Kendall’s sample size estimation method, the sample size should be 5 to 10 times the number of variables.²² A total of 26 variables were included in this study, encompassing the General Information Questionnaire (including gender, age, place of residence, etc.), the QASD, HADS and the Quality of Life in RA Patients Scale. According, the required sample size was calculated as 10 times the number of variables. Considering a 10% potential non-response rate, the minimum required sample size was 286.

Data Collection

To ensure the smooth conduct of the study, a research team was established. The team consisted of one senior rheumatology nursing expert (study supervisor), one department’s chief physician (responsible for disease diagnosis and basic treatment), one graduate nursing student (responsible for data collection and archiving) and three nurses (responsible for data collection). Prior to initiating the survey, all members of our research team received standardized training to ensure consistent understanding of study protocols and operational procedures. The training program covered: (1) in-depth understanding of the research topic; (2) mastery of the questionnaire content; (3) communication techniques

and standardized interview scripts. A pilot survey involving 30 patients was conducted to assess the feasibility and clarity of both the survey procedure and instruments. Potential participants were identified from the department's daily appointment lists (outpatients) and recent admission records (inpatients), and those with a documented RA diagnosis were subsequently screened against the study's inclusion and exclusion criteria. Eligible patients were then approached in the outpatient waiting area or at the bedside in the ward and invited to participate in the trial. Subsequently, the research team conducted face-to-face questionnaire surveys in the outpatient clinics and inpatient units of the rheumatology department. Before each survey, standardized instructions were provided to explain the content to the patients, and written informed consent was obtained. Questionnaires were completed by the patients themselves; for those experiencing difficulty, the investigators provided assistance. Disease-related information was completed by the investigators after reviewing the patients' electronic medical records. Questionnaires were collected on-site and checked for completeness. Questionnaires were excluded if more than 10% of items were missing, if there were logical inconsistencies, or if all responses were identical. All data were double-checked and entered into a computer database.

Instruments

In this study, the General Information Questionnaire was developed through a process that included a literature review,^{23,24} expert consultations with practicing rheumatologists and senior rheumatology nurses, and a pilot survey for refinement. The questionnaire collected both demographic and disease-related information. Demographic data included gender, age, place of residence, occupation, and other relevant factors. Disease-related information included disease duration, complications, surgical history, joint deformity, duration of morning stiffness (hours), joint function grade, degree of joint pain, and disease stage. Joint pain was assessed using the Visual Analogue Scale (VAS),²⁵ with scores ranging from 0 (no pain) to 10 (severe pain); 1–3 indicated mild pain, 4–6 moderate pain, and 7–10 severe pain. Disease activity was assessed using the Disease Activity Score in 28 joints (DAS28),²⁶ with a score < 2.6 indicating disease remission and ≥ 2.6 indicating active disease.

Questionnaire for the Assessment of Self-Disgust (QASD)

The QASD was developed by Schienle et al,²⁷ and subsequently translated into Chinese by Jin Yanfei et al.²⁸ The scale has been widely applied and validated across diverse chronic disease populations, including patients with diabetic foot,²⁹ rectal cancer and a stoma,¹⁶ and breast cancer.³⁰ The scale comprises 2 dimensions: personal disgust and behavioral disgust, with a total of 14 items. Each item is rated on a 4-point Likert scale from 0 (completely disagree) to 4 (completely agree), yielding a total score ranging from 0 to 56. Higher total scores indicate greater levels of self-disgust. In the present study, the scale demonstrated excellent internal consistency, with a Cronbach's α of 0.967.

Hospital Anxiety and Depression Scale (HADS)

The HADS was developed by Zigmond et al,³¹ and subsequently translated into Chinese by Sun Zhenxiao et al.³² It has been widely used to screen for anxiety and depression in hospitalized patients. The scale consists of 2 subscales: anxiety and depression. Depression subscale includes 7 items, each rated on a 4-point Likert scale from 0 to 3, with higher scores indicating greater severity of depressive symptoms. A score > 8 is considered indicative of depression. In the present study, the depression subscale demonstrated excellent internal consistency, with a Cronbach's α of 0.912.

Quality of Life in RA Patients Scale

The Quality of Life in RA Patients Scale was developed by Jiang Lindi et al.³³ It comprises 25 items across 4 dimensions: physiological function, psychological function, social function and health self-awareness. The psychological function dimension includes 4 items, while the other 3 dimensions each consist of 7 items. Each item is rated on a 5-point scale, with total scores ranging from 25–125. Higher scores indicate poorer quality of life. Its initial validation involved a pilot study and two clinical trials in Chinese RA patients, with rigorous statistical evaluation including item analysis, test-retest reliability, and factor analysis. In the present study, the scale demonstrated excellent internal consistency, with a Cronbach's α of 0.960.

Statistical Analyses

Data were analysed using IBM SPSS v27.0 software. Continuous variables were presented as mean $\pm$ standard deviation ($\bar{X} \pm S$) and categorical variables were expressed as frequency and percentage. One-way analysis of variance (ANOVA) and independent-samples *t*-test were used to compare differences in quality of life scores among patients with different characteristics. Pearson correlation analysis was performed to examine the relationships among depression, quality of life, and self-disgust. The mediation effect was tested using the Bootstrap sampling method with 5000 resamples. Statistically significance was defined as 95% confidence interval that did not include 0, with a significance level of $\alpha=0.05$.

Ethics

The study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the Ethics Review Committee of the First Affiliated Hospital of Guangzhou University of Chinese Medicine (No: K-2024-140).

Results

Characteristics of Patients

A total of 350 questionnaires were distributed in this survey, and 342 valid questionnaires were ultimately collected, yielding an effective response rate of 97.7%. The demographic and clinical characteristics of the participants were presented in Table 1.

Table 1 Demographic and Clinical Characteristics of the Sample (N=342)

	Number of Case	Percentage (%)
Gender		
Male	63	18.4
Female	279	81.6
Age (year)		
<50	67	19.6
50–59	91	26.6
60–70	115	33.6
>70	69	20.2
Place of residence		
Towns and cities	218	63.7
Rural areas	124	36.3
Occupations		
Farming	82	24.0
In service personnel	70	20.5
Retirement	120	35.1
Other	70	20.5
Degree of education		
Primary school and below	133	38.9
Junior high school	98	28.7
High school or technical secondary school	64	18.7
College or above	47	13.7
Marriage		
Married with an existing spouse	309	90.4
Unmarried	6	1.8
Divorce	2	0.6
Widowed spouse	25	7.3

(Continued)

Table 1 (Continued).

	Number of Case	Percentage (%)
Payment methods for medical expenses		
Medical insurance	308	90.1
Out of pocket	34	9.9
Monthly household income per capita (Yuan)		
<5000	182	53.2
5000–10,000	132	38.6
>10,000	28	8.2
Course of disease		
<1	42	12.3
1–5	86	25.1
>5	214	62.6
Complications		
Yes	107	31.3
No	235	68.7
History of surgery		
Yes	156	45.6
No	186	54.4
Joint deformity		
Yes	188	55.0
No	154	45.0
Morning stiffness time		
No	126	36.8
<1h	136	39.8
1–2h	46	13.5
>2h	34	9.9
Grade of joint function*		
Class I	13	3.8
Grade II	212	62.0
Grade III	104	30.4
Grade IV	13	3.8
Degree of joint pain		
No pain	0	0
Mild pain	126	36.8
Moderate pain	135	39.5
Severe pain	78	22.8
Intense pain	3	0.9
Staging of disease		
Phase of remission	78	22.8
Phase of activity	264	77.2
Types of RA drugs currently taken		
1–2	155	45.3
3–4	158	46.2
>4	29	8.5
Family history		
Yes	54	15.8
No	288	84.2

Notes: * Grade I: Joint function is intact, and daily activities can be performed without barrier. Grade II: Mild limitation of joint function, with pain and discomfort in one or more joints, but the patient remains capable of performing daily activities. Grade III: Joint function is significantly limited, the patient is unable to work, and experiences difficulties in performing activities of daily living. Grade IV: Severe or complete loss of joint function, the patient is confined to bed or a wheelchair for long periods, and unable to care for themselves.

Scores of Depression, Quality of Life and Self-Disgust in Patients with RA

The results showed that the mean depression score was (9.01 ± 4.97), the mean quality of life score was (82.23 ± 16.73), and the mean self-disgust score was (27.58 ± 13.67). (Table 2).

Univariate Comparison of Quality of Life Scores in Patients with RA

The results of univariate analysis demonstrated that age, place of residence, occupation, educational level, monthly per capita household income, course of disease, surgical history, joint deformity, joint function grade, degree of joint pain, and disease stage were associated with statistically significant differences in quality of life scores (all $p < 0.05$). No significant differences were observed for other variables ($p > 0.05$) (Table 3).

Table 2 Scores of Depression, Quality of Life and Self-Disgust in Patients with RA (n=342, Score, $\bar{x} \pm s$)

Variables	Dimensions	Total Score	Item Mean Score
Depression		9.01 ± 4.97	1.29 ± 0.71
Quality of life		82.23 ± 16.73	3.29 ± 0.67
	Physiological function	22.09 ± 6.52	3.16 ± 0.93
	Psychological function	11.44 ± 4.26	2.86 ± 1.06
	Social function	25.35 ± 4.49	3.62 ± 0.64
Self-disgust	Health self-awareness	23.35 ± 4.38	3.34 ± 0.63
		27.58 ± 13.67	1.97 ± 0.98
	Personal disgust	17.08 ± 8.84	1.90 ± 0.98
	Behavioral disgust	10.51 ± 5.07	2.10 ± 1.01

Table 3 Comparison of Total Quality of Life Scores in RA Patients with Different Characteristics (n=342)

	Number of Case	Mean $\pm$ SD	t/F	p
Age (year)			3.992	0.008
<50	67	76.34 ± 16.14		
50–59	91	83.64 ± 16.61		
60–70	115	82.55 ± 15.99		
>70	69	85.54 ± 17.58		
Place of residence			–5.401	<0.001
Towns and cities	218	78.81 ± 16.93		
Rural areas	124	88.23 ± 14.62		
Occupations			11.516	<0.001
Farming	82	89.18 ± 16.52		
In service personnel	70	75.34 ± 15.17		
Retirement	120	79.59 ± 15.18		
Other	70	85.47 ± 17.54		
Degree of education			8.073	<0.001
Primary school and below	133	86.28 ± 17.12		
Junior high school	98	82.03 ± 16.65		
High school or technical secondary school	64	80.95 ± 15.37		
College or above	47	72.89 ± 13.72		
Monthly household income per capita (Yuan)			8.414	<0.001
<5000	182	85.52 ± 15.37		
5000–10,000	132	77.85 ± 17.28		
>10,000	28	81.46 ± 18.36		

(Continued)

Table 3 (Continued).

	Number of Case	Mean±SD	t/F	p
Course of disease			5.896	0.003
<1	42	78.95±17.95		
1–5	86	77.95±15.07		
>5	214	84.58±16.75		
History of surgery			5.026	<0.001
Yes	156	87.10±17.86		
No	186	78.13±14.57		
Joint deformity			4.717	<0.001
Yes	188	85.97±16.35		
No	154	77.65±16.10		
Grade of joint function			59.463	<0.001
Class I	13	60.69±9.07		
Grade II	212	77.04±13.93		
Grade III	104	91.69±13.90		
Grade IV	13	112.54±7.37		
Degree of joint pain			21.890	<0.001
No pain	0	0		
Mild pain	126	75.35±14.81		
Moderate pain	135	82.61±16.87		
Severe pain	78	91.46±13.55		
Intense pain	3	113.33±11.55		
Staging of disease			–3.531	<0.001
Phase of remission	78	76.99±14.19		
Phase of activity	264	83.77±17.13		

Correlation Analysis of Depression, Quality of Life and Self-Disgust in Patients with RA

Depression was significantly correlated with quality of life in patients with RA ($r=0.787$, $P < 0.001$). Depression was also positively correlated with self-disgust ($r=0.804$, $P < 0.001$). Additionally, quality of life scores were positively correlated with self-disgust ($r=0.727$, $P < 0.001$) (Table 4).

Mediating Effect of Self-Disgust Between Depression and Quality of Life in Patients with RA

Taking quality of life as the dependent variable, depression as the independent variable, and self-disgust as the mediating variable, factors with statistically significant differences in the general data (age, place of residence, occupation, educational level, monthly per capita household income, course of disease, surgery history, joint deformity, joint function grade, degree of joint pain, and disease stage) were included as control variables for the mediation analysis.

Table 4 Correlation of Depression, Quality of Life, and Self-Disgust in Patients with RA (n=342)

Variables	Depression	Quality of Life	Self-Disgust
Depression	1	—	—
Quality of life	0.787**	1	—
Self-disgust	0.804**	0.727**	1

Note:** $P < 0.001$.

The results demonstrated that depression significantly predicted quality of life, with a direct effect of 1.692. Depression also indirectly predicted quality of life through self-disgust, with an indirect effect of 0.439. The 95% confidence interval of the direct effect of depression on quality of life did not include 0. In the pathway of depression → self-aversion → quality of life, the 95% confidence interval of the mediating path did not include 0, indicating that the mediating effect was statistically significant. The indirect effect accounted for 20.60% of the total effect. (Tables 5 and 6, Figure 1).

Discussion

Depression, Quality of Life and Self-Disgust in Patients with RA

The results of this study demonstrated that the mean depression score among RA patients was 9.01±4.97, with a prevalence of 53.80%, which was significantly higher than the findings reported by Ionescu et al.³⁴ This discrepancy may be related to differences in sample size, the diversity of the study population, and the quality of the respective studies. Importantly, a key factor likely contributing to the elevated depression in our cohort is the high disease activity observed: 264 patients (77%) were in the active stage of the disease. Active RA is characterized by more severe inflammation and pain, which may place a physical and psychological burden on the patient and further induce depressive mood. As a systemic chronic inflammatory disease, RA is recurrent and unpredictable. Patients often experience uncertainty regarding disease progression, which can lead to abnormal somatosensory response and long-term dysregulation of the autonomic nervous system, ultimately resulting in excessive activation of psychological defense mechanisms and depression.³⁵ Previous studies have suggested that depression in RA arises from the combined influence of environmental factors, psychological factors, and genetic susceptibility, etc. The comorbidity can lead to increased medical costs, reduced drug efficacy, and a higher incidence of complications.³⁶ It is therefore recommended that rheumatologists and nursing staff systematically provide patients with information on disease knowledge and treatment through pamphlets, verbal education and other methods to reduce disease-related uncertainty and help patients better cope with the their condition. Furthermore, it is important to identify the underlying causes of depression in clinical practice to inform individualized nursing interventions. For people with a tendency toward depression, timely interventions such as mindfulness-based therapy or cognitive behavioral therapy should be implemented by psychologists to reduce the occurrence and severity of depressive symptoms.³⁷

The mean quality of life score among RA patients was 82.23±16.73, with an average item score of 3.29±0.67. Compared with the item mean, the quality of life of RA patients was at a lower-middle level. This may be explained by the fact that 264 patients (77%) in this study were in the active stage of the disease, and quality of life is related to the

Table 5 Mediating Model Test of Self-Disgust Between Depression and Quality of Life in Patients with RA

Outcome Variables	Predictor Variables	R ²	F	t	β	p
Quality of life	Depression	0.747	80.941	19.836	2.131	<0.001
Self-disgust	Depression	0.684	59.350	20.433	2.005	<0.001
Quality of life	Depression	0.757	78.633	10.658	1.692	<0.001
	Self-disgust			3.692	0.219	<0.001

Table 6 Total Effect, Direct Effect and Mediating Effect of Depression on Quality of Life

	Size of Effect	SE	Bootstrap 95% CI		Proportion of Effect (%)
			LLCI	ULCI	
Total effect	2.131	0.107	1.920	2.343	100.00
Indirect effect	0.439	0.136	0.184	0.713	20.60
Direct effect	1.692	0.159	1.380	2.005	79.40

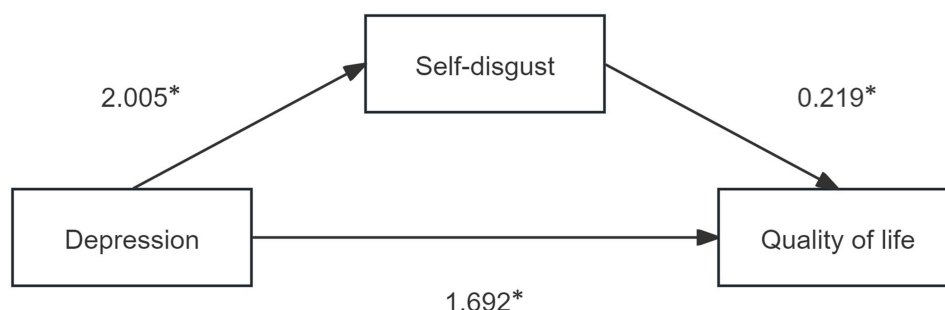


Figure 1 Mediating effect model of self-disgust between depression and quality of life in patients with rheumatoid arthritis.

Note: * $p < 0.001$.

disease activity. Patients with more active disease often have more severe functional limitations, which may contribute to decreased physical function and quality of life.³⁸

Among the dimensions of the quality of life scale, the social function score (25.35 ± 4.49) was the highest, indicating that social function had the greatest impact on overall quality of life. To improve the quality of life of RA patients, nursing staff should focus on two main aspects: disease control and social function recovery. On one hand, nursing staffs should patiently educate patients about their condition, emphasize the importance of actively cooperating with physicians in treatment, and utilize mobile health apps, online platforms and educational videos to explain the causes of disease exacerbation and daily care strategies. Remote monitoring of medication adherence and regular follow-ups can help stabilize the disease.³⁹ On the other hand, for patients with joint dysfunction, personalized rehabilitation plans should be developed to accelerate recovery and maintain daily living abilities by physiotherapists. Additionally, patients should be encouraged to participate in social activities, such as interest groups and volunteer services, according to their preferences, to enhance social engagement and overall quality of life.

In addition, the mean self-disgust score of RA patients was 27.58 ± 13.67 , with an average item score of 1.97 ± 0.98 , which is close to the midpoint value of 2, indicating a moderate level of self-disgust. This score is similar to the results of studies in patients with diabetes,¹⁷ which might be attributed to the fact that shared psychological challenges inherent to chronic illness. Among the dimensions, the personal disgust score was relatively high. The personal disgust dimension reflects the extent to which individuals feel aversion toward their inherent attributes and internal traits. The high score in this dimension may be related to the fact that 55.0% of patients in this study had joint deformities and all patients experienced varying degrees of pain. These physiological issues can cause both physical and psychological harm, trigger doubts about their self-worth, and induce dissatisfaction with body image, thereby intensifying negative self-perceptions and ultimately leading to self-disgust. These findings are consistent with previous studies.^{40,41}

Therefore, nursing interventions should focus on addressing self-disgust in patients with joint deformities and chronic pain. Approaches such as cognitive behavioral therapy and emotional dysregulation treatment and other methods under the guidance of a psychologist can help correct maladaptive cognitions.⁴² Simultaneously, nursing staff should educate patients that the changes in joint and body appearance are natural consequences of RA progression, and guide them to accept and adapt to these body image changes. Patients should also be informed that timely and appropriate treatment can delay or even prevent the development of joint deformities. Additionally, patients can be instructed to use interventions such as hot and cold compresses, massage, and distraction to alleviate pain, which may effectively reduced levels of self-disgust.

Depression Is Associated with the Quality of Life of Patients with RA

The results of this study demonstrated that depression of RA patients was significantly correlated with quality of life scores ($P < 0.05$); that is, higher depression scores were associated with poorer quality of life, consistent with the findings of Rojas-Gualdrón D F et al.⁴³ Depression is characterized by persistent low mood, loss of interest, decreased energy, and difficulty concentrating.⁴⁴ In the context of RA, these negative emotional states may contribute to a gradual loss of interest in daily activities and reduced social engagement.

Furthermore, evidence from other studies suggests that depression may be linked to an amplified perception of pain and exacerbated physical discomfort in RA patients,⁴⁵ which could limit mobility and, consequently, be associated with diminished quality of life. However, current clinical practice often emphasizes improvement of physiological indicators while neglecting the impact of psychological factors on the disease. Therefore, it is recommended that psychologists should incorporate depression screening into routine assessment to identify patients with high levels of depression in a timely manner. Interventions such as activation of high-arousal emotion induction and regular patient communication activities could help alleviate negative emotions.⁴⁶ Additionally, recommending appropriate physical activities, such as Tai Chi and joint mobility exercises, tailored to the patient's condition, may support both physical and mental well-being and help mitigate the observed association between depression and poorer quality of life.

Self-Disgust Has a Partial Mediating Effect Between Depression and Quality of Life in Patients with RA

The mediation analysis in this study demonstrated that self-disgust partially mediates the relationship between depression and quality of life in patients with RA, accounting for 20.60% of the total effect. This indicates that depression may be linked to quality of life through its relationship with self-disgust. Specifically, higher levels of depression were associated with increased self-disgust and, in turn, with poorer quality of life in this cross-sectional sample.

According to the biopsychosocial theoretical framework, the health status of RA patients is influenced by biological, psychological, and social factors. Biological and social stressors, such as long-term medication burden, disease recurrence, disease progression, concerns about prognosis, and social discrimination, are correlated with changes in physiological state, emotional regulation, and psychological stress, which coincide with higher levels of depression and self-disgust and lower quality of life. Previous studies have also reported concurrent elevations in depression and self-disgust.⁴⁷

Cognitive behavior theory (CBT) emphasizes that an individual's cognitive model is closely related to health behaviors.⁴⁸ In RA patients, self-disgust, as a form of negative cognition, is often accompanied by extreme self-denial and behavioral reactions such as avoidance, which are correlated with impaired social functioning and reduced engagement in daily life activities, potentially contributing to lower quality of life.⁴⁹

Therefore, nursing staff should enhance their ability to identify depression and self-disgust in RA patients, strengthen collaboration with rheumatologists, rehabilitation therapists, psychological counselors, and other members of multidisciplinary teams, and establish a comprehensive nursing support system⁵⁰ to address both the physical and psychological needs of patients. Additionally, effective communication with patients' family members is essential; through collaborative health education, families can acquire caregiving skills, thereby enhancing family support. Moreover, implementing a hospital-community-family continuous follow-up model⁵¹ allows timely assessment of patients' needs and provision of appropriate interventions, ultimately contributing to a significant improvement in quality of life.

Limitations

This study has the following limitations: 1. Only one hospital in Guangzhou was selected for the investigation, which limits the representativeness of the sample. Further studies should consider large-sample, multi-center research to enhance generalizability. 2. It should be noted that due to the cross-sectional design of this study, causal relationships cannot be established. While the mediation model is consistent with theoretical pathways, longitudinal or experimental studies are needed to clarify. 3. There is a possibility of self-report bias in this study because data on key variables came from patient questionnaires, which may be influenced by social desirability or current mood. 4. Although key clinical and demographic factors were controlled for, other unmeasured variables (eg, social support specifics, medication adherence) could influence the observed relationships.

Conclusion

In conclusion, this study identified significant associations among depression, self-disgust, and quality of life in patients with RA. Depression was not only directly associated with poorer quality of life but was also linked to it indirectly

through the pathway of self-disgust. These findings suggest that monitoring levels of depression and self-disgust in RA patients may be clinically important. Future longitudinal or intervention studies are needed to examine whether addressing these psychological factors through targeted strategies could lead to improvements in patient quality of life.

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare no conflicts of interest in this work.

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